

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A method of determining how a region of a data structure in an application evolves, comprising:
periodically traversing selected subgraphs of the region in the application in order to detect data structure changes in the subgraphs while the application is running;
~~locating structural changes in the subgraphs;~~
using these ~~structural~~ data structure changes to describe, characterize, and identify changes to the region as a whole and
reporting the changes to the region to an analysis agent.
2. (Cancelled) The method of claim 1 further comprising reporting the region changes to an analysis agent.
3. (Original) The method of claim 1 used to detect one of the following changes to a region: additions to a region; removals from a region; and internal restructuring within a region.
4. (Original) The method of claim 1 wherein the selected subgraphs to traverse are derived by

computing the region key for the constituents of the data structure; and
identifying the unique set of paths from owner proxy to change proxy as the set
of traversals.

5. (Original) The method of claim 4 wherein the traversals are shortened by
identifying a subpath of the path which is unlikely to change as the region
evolves; and

trimming the path to exclude the parts of the path which are unlikely to change.

6. (Original) The method of claim 1 wherein determining how a region of a data
structure in an application evolves is a continuous and adaptive process.

7. (Original) The method of claim 6 wherein the process is made continuous and
adaptive by

identifying a set of desired updates; and

adjusting the period in between traversals based on whether the desired updates
have been witnessed.

8. (Original) The method of claim 6 wherein the process is made continuous and
adaptive by

identifying a set of desired updates; and

adjusting the frequency of sampling any one traversal based on whether that
traversal has detected desired updates.

9. (Original) The method of claim 6 wherein the process is made continuous and

adaptive by implementing one of the following procedures based on the result of performing a traversal: adding new traversals; removing existing traversals; and modifying the path of existing traversals.

10. (Previously presented) The method of claim 1 further comprising updating qualitative characterizations of the regions under analysis based on structural changes to the regions as a whole.;
11. (Original) The method of claim 1 further comprising updating quantitative characterizations of the regions under analysis based on structural changes to the regions as a whole.
12. (Currently amended) A computer readable medium for determining how a region of a data structure in an application evolves, comprising instructions for:
 - periodically traversing selected subgraphs of the region in the application in order to detect data structure changes in the subgraphs while the application is running;
 - ~~locating structural changes in the subgraphs;~~
 - using these structural changes to describe, characterize, and identify changes to the region as a whole; and
 - reporting the changes to the region to an analysis agent.

13. (Currently amended) An information processing system comprising:
a processor comprising logic for performing instructions of:
periodically traversing selected subgraphs of ~~the~~a region in the
application in order to detect data structure changes in the subgraphs while the
application is running;
~~locating structural changes in the subgraphs; and~~
using these structural changes to describe, characterize, and identify
changes to the region as a whole; and
a memory for storing the instructions; and
an interface for reporting the changes to the region to an analysis agent.